NAVY MEDICINE

May-June 1990

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COVER: Wounded troops litter the ground as triage begins. Recently, HMC Eric W. Larson, assigned to the Uniformed Services University of the Health Sciences, Bethesda, MD, won first place in the Special Category for the 1989 Military Photographer of the Year competition, becoming the first hospital corpsman ever to win that honor. His photo, "Triage," depicts a scenario from the January 1989 "Operation Bushmaster" held at Camp Bullis, TX.

Total Quality Management:

Our New Culture

By now, I hope that every member of the Navy Medical Department from commanding officer to ward corpsman is aware that we are undertaking an exciting transformation in Navy medicine: responding to the enormous challenges resulting from a nationwide crisis in health care delivery.

I am referring to our implementation of philosophy and techniques of *Total Quality Management* (TQM). I expect this philosophy of management to become the standard by which all members of the Medical Department will strive to improve every aspect of our services to our beneficiaries and patients. Not many years ago, a patient would go directly to a physician, and a relationship based on trust and the medical professional ethic would be formed. The nurse was the "handmaiden" of the physician, technicians were mostly confined to laboratories and unseen, and therapists and administrators existed with little or no independence; autonomy belonged to the physician, a member of "the sacred profession" who always "knew best."

Contrast health care today. When the door closes and the physician begins to conduct the anamnesis (take a history) that same "sacred" doctor-patient relationship dating to Hippocrates continues, but now the physician is most often only one of many individuals responsible for a successful outcome. Consultant physicians, nurses and nurse practitioners, podiatrists, physical and occupational therapists, and many, many others share autonomy for directing the patient's care. Just as striking, patients have become nearly full partners in the decision-making process. Administrators make decisions regarding access, scope of care, and productivity expected of the many team members. In short, health care has become a complex system in which skilled professionals and technicians work together to produce a comprehensive range of services to patients. Those patients expect and are entitled to quality in the services they receive. Navy medicine is a service industry. It is time for every member of the Medical Department to focus on a common goal.

TQM provides a well-proven organizational management philosophy and easily learned techniques to achieve that goal. Central to TQM philosophy is the caveat that success will be achieved by continuously improving the quality of everything we undertake. This is achieved by first understanding all that we do as a series of interrelated actions or processes. By breaking down complex operations into component processes, analyzing scientifically the operating details of each process (using teams made up of those who actually perform the work), making changes which we expect will improve the process, and then analyzing again to see if the expected result is achieved, we will develop a cycle of improvement. Repeated many times, we can then approach perfection in our work.

Equally vital to the success of this effort will be our willingness to work together in a mutually supportive manner, recognizing that uncontrolled competition among departments and divisions leads to inefficiency, waste, and compromise of total quality. Sharing ideas, knowledge, and resources will test our ability to grow and change.

The practice of medicine is evolving from less of an art into more of a science. As this happens, individual style and preferences must give way to organizational standards employing techniques proven to be most efficient and safe. This standardization of practice permits reduction of variation in clinical as well as administrative operations, and further ensures the quality of care provided to the patient.

Make no mistake. TQM is not a "program" in the traditional sense, applied on top of our current management mode. It is a fundamental change in our way of doing business, administratively and clinically. I am calling on each of you to modify skills and techniques that have been with you throughout your Navy careers.

Just learning the basic philosophy and techniques of TQM will be a massive effort. To emphasize the seriousness of my intent, I have created a major new code at BUMED—Code 8—which will report directly to me for quality matters. We have also established and are building a Quality Management Institute at the Naval School of Health Sciences. This institute will develop courses, training materials, and serve as expert consultants to commands as they transition to quality management.

I ask each of you to be alert to opportunity, to seek out information, and learn as much as you can about TQM in the coming months. I *know* it will form the framework upon which a new and energized Medical Department will continuously improve service to the men and women of the Navy and Marine Corps and their families, both on active duty and those who have served us so well in the past.

CHARLIE GOLF ONE.

VADM James A. Zimble, MC

DEPARTMENT OF THE NAVY

BUREAU OF MEDICINE AND SURGERY
WASHINGTON D.C. 20372-5120

IN REPLY REFER TO

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Ser 24/

MEMORANDUM FOR THE SECRETARY OF THE NAVY

Via: Vice Chief of Naval Operations

Subj: TOBACCO USE IN BUREAU OF MEDICINE AND SURGERY (BUMED) ACTIVITIES

Ref: (a) SECNAVINST 5100.13A

1. Almost one year ago, the use of tobacco products in Navy shore based medical treatment facilities was prohibited. I intend to extend that prohibition to the Bureau of Medicine and Surgery effective 1 May 1990 and to those non-treatment activities under my command effective 1 July 1990. I have previously announced my intentions to my staff to ensure they are informed and prepared for this action.

2. My decision does go beyond the parameters of reference (a), but I believe that all of Navy medicine must lead by example. I am confident of your support and I will support my staff members with smoking cessation assistance.

3. I believe it is also time to update reference (a) and I have directed my staff to work with Vice Admiral Boorda's staff to produce an instruction reflecting renewed insight and determination.

Very respectfully,

JAMES A. ZIMBLE

Flag Officer Selectees

RADM-selectee (now rear admiral) **Carmen A.Ciardello,** DC, deputy chief of the dental division, Bureau of Medicine and Surgery, Washington, DC, was born in Lawrence, MA. He graduated with a B.S. degree from Merrimack College, Andover, MA, in 1957 and received his D.D.S. degree from Georgetown University, Washington, DC, in 1961.

Dr. Ciardello was commissioned in the Navy Dental Corps following graduation and served his first tour of duty at Newport, RI. He has had tours of duty aboard the USS *Sperry,* homeported in San Diego, CA, and at Naval Station, San Diego. In 1967, he reported aboard the USS *Piedmont* as senior dental officer.

In 1970, following a postgraduate course in general dentistry at the Naval Dental School, Bethesda, MD, Dr. Ciardello served as director of clinical services at the Branch Dental Clinic, Naval Air Station, Alameda, CA. From July 1974 to August 1975, he was attached to the 3rd Dental Company, 3rd Marine Division, Okinawa, Japan, and was head of the Branch Dental Clinic at Camp Courtney. He then headed the operative dentistry section of the Naval Regional Dental Center, NAS Treasure Island, CA.

From August 1976 to June 1980, Dr. Ciardello was attached to the Naval Regional Dental Center, Pensacola, FL, and served as head of the Branch Dental Clinic in Gulfport, MS, with additional duty as COMCB-LANT dental officer. He reported to Naval Station, Keflavik, Iceland, in June 1980 as the senior dental officer with additional duty to Iceland Defense Force Staff, serving through July 1982.

RADM Carmen A. Ciardello, DC

Dr. Ciardello was the executive officer, Naval Dental Clinic, Pensacola, FL, from August 1982 through July 1985 and served as commanding officer, Naval Dental Clinic, Great Lakes, IL, from August 1985 to August 1988.

He is a member of the American Dental Association, Academy of Operative Dentistry, Academy of General Dentistry, Pierre Fauchard Academy, Chicago Dental Society, Association of Military Surgeons of the United States, and Deputy Regent of the International College of Dentistry. He wears the Legion of Merit, Meritorious Service Medal with gold star in lieu of 2nd award, Navy Commendation Medal, Navy Achievement Medal, and two Meritorious Unit Commendations.

CAPT Maryanne T. Ibach, NC, USNR

RADM-selectee **Maryanne T. Ibach,** NC, USNR, assigned to NR OPNAV-093 Detachment 106 at the Pentagon, Office of the Surgeon General, was born in Philadelphia, PA. In 1962, she graduated from the Misericordia Hospital School of Nursing, Philadelphia and in 1964 was commissioned an ensign in the Navy Nurse Corps.

After completing Officer Candidate School in October of that year she was assigned to Naval Hospital, Pensacola, FL, as charge nurse in pediatrics. In August 1966, she reported for duty aboard the hospital ship USS *Repose* (AH-16) at sea in the Vietnam combat zone. Following her return from the Western Pacific in September 1967, she served at the Naval Hospital, Portsmouth, NH. Her next assignment was at Naval Hospital, Philadelphia where she was head nurse on the EENT and ambulatory surgical wards, caring primarily for personnel wounded in Vietnam. Subsequently she served at Naval Hospital, Bethesda, MD, and the BUMED Branch Medical Clinic in Washington, DC. In 1975, she resigned her regular commission and transferred to the Naval Reserve.

CAPT Ibach's early reserve duty assignments were to various IRUs and VTUs, drilling at the Naval Medical Clinics at NAS Alameda, NAVSTA Treasure Island, and Naval Hospital, Oakland, CA. CAPT Ibach served at the Military Sealift Command Pacific, Headquarters Detachment 120 where she was director of the medical department and qualified as MSCPAC staff duty officer. From 1981 to 1984, she served in a variety of assignments in the Washington, DC, area including assistant training officer, general VTU-0614; nursing education officer and executive officer MEDCRU 306/ NRNHBETH 2906; and ACDU-TRAs, serving as director, Crisis Operations Center, OASD(RA), for global readiness exercises Proud Saber '83 and Pressure Point '84. In November 1984, she affiliated with NMCNCR Detachment 106 and subsequently served more than 8 months on active duty at Naval Hospital, Bethesda, where she was responsible for establishing the Reserve Liaison Office and developing the command's reserve integration program. In October 1986, she assumed command of NRHB Bethesda 2906 serving until October 1988.

CAPT Ibach holds a bachelor of nursing degree from the University of Pennsylvania, 1972; a master of arts degree in higher education from George Washington University, 1975; and a master's certificate in gerontology from George Mason University, 1985. Her military awards include the Navy Commendation Medal, two Navy Unit Commendations, Meritorious Unit Commendation, National Defense Medal, Vietnam Service Medal with three Bronze Stars, Armed Forces Reserve Medal, and various Vietnam service awards.

CAPT William J. McDaniel, MC

RADM-selectee **William J. McDaniel,** MC, commanding officer, Naval Hospital, Charleston, SC, since 27 July 1988, was born on 26 Feb 1943, on a farm near Muskogee, OK. Attending college on a full wrestling scholarship, he received a B.S. in physiology in 1964 from Oklahoma State University. He graduated from the University of Oklahoma School of Medicine in 1968 and completed his internship at St. Francis Hospital, Tulsa, OK, in 1969.

After he was commissioned in the Navy Medical Corps on 29 Dec 1969, he attended flight surgeon training at the Naval Aerospace Medical Institute in Pensacola, FL. Subsequent duty assignments included flight surgeon, MCAS, El Toro, CA; flight surgeon, MCAS, Futemma, Okinawa, and aboard USS *Tripoli* (LPH-10) in Vietnam; flight surgeon, NAS Whidbey Island, WA; orthopedic surgery resident, Naval Hospital, Oakland, CA; chief, department of orthopedics, Naval Hospital, Rota, Spain; acting commanding officer and director of clinical services, Naval Hospital, Rota; department of orthopedics, U.S. Naval Academy, Annapolis, MD; National War College, Fort Leslie J. McNair, Washington, DC; and Seventh Fleet surgeon on Commander,

CAPT Hugh P. Scott, MC

Seventh Fleet staff, USS *Blue Ridge,* Yokosuka, Japan.

Other activities include Navy Wrestling Champion, 1973-1977; Interservice Wrestling Champion, 1975-1976; and World Silver Medalist in CISM Games, Rome, 1974. Dr. McDaniel was the national team physician for Track and Field World Championship, Rio de Janeiro, 1976; World Championship Basketball in Teheran, Iran, in 1977; World University Games, Bucharest, Romania, 1981; and for the U.S. Boxing Team, LaPaz, Bolivia, 1982. He was also the head physician at the National Sports Festival in 1982 and 1983 and a U.S. Olympic Team physician for the 1984 Olympics, Los Angeles, CA.

Dr. McDaniel's awards include the Legion of Merit, Meritorious Service Medal, Joint Services Commendation Medal, Sea Service Medal, Overseas Campaign Medal, Meritorious Unit Citation, and Vietnam Service Campaign Medal with two battle stars and FMF device.

RADM-selectee **Hugh P. Scott,** MC, fleet surgeon, CINCPACFLT, is a native of Philadelphia, PA. He graduated from the Philadelphia College of Osteopathic Medicine in 1964. After completing a residency in otolaryngology at Detroit Osteopathic Hospital in 1968, he was called to active duty by Special Selective Service Call Number 41.

Dr. Scott's first assignment was to the U.S. Naval Dispensary, Norfolk, VA, where he served as chief of the ENT Clinic from 1968 to 1970. He was released from active duty with a Reserve commission in 1970, and returned to Detroit, MI, where he entered private practice and also held a teaching appointment as a clinical assistant professor of medicine at Michigan State University, College of Osteopathic Medicine. During the next 5 years, Dr. Scott served as a member of the Ready Reserve and was active in a number of assignments including Medical Company 9-5 (Wayne University School of Medicine) Detroit, MI; Training and Support Unit 9-22; and medical officer for Reserve Crew (Gold), USS *Damato* (DD-871).

In July 1975, he returned to active duty and attended the Naval Undersea Medical Institute in Groton, CT, and the Navy School of Diving and Salvage in Washington, DC. He then was assigned as medical officer of the staff of Submarine Squadron Ten, New London, Groton, CT. He was designated as a qualified submarine medical officer in June 1976 and as a qualified medical deep sea diving officer in July 1977. Dr. Scott was reassigned to the staff of the Naval Submarine Medical Center in 1978 where he served as chief of otolaryngology from 1978 to 1980 and as the senior medical officer of the Groton Branch Clinic from 1978 to 1983. Also, he served additional duty as medical officer on staff of Commander Submarine Group Two from 1978 to 1983.

He reported to the Naval Medical Command (Bureau of Medicine and Surgery), Washington, DC, for duty in July 1983 as director of undersea medicine and radiation health division until July 1986. He was commanding officer of Naval Hospital, Groton, CT, from September 1986 until May 1988. He commanded Naval Hospital, Camp Lejeune, NC, from June 1988 until May 1990.

Dr. Scott is a diplomate of the American Osteopathic Board of Ophthalmology and Otolaryngology. He is a fellow in the Osteopathic College of Ophthalmology and Otolaryngology and also an active fellow in the American Academy of Otolaryngology and Head and Neck Surgery. He has served as the Navy consultant to the American College of Undersea and Hyperbaric Medicine. He is also a member of the Association of Military Surgeons of the United States, Association of Military Osteopathic Physicians, and Naval Submarine League.

RADM-selectee **William D. Sullins, Jr.,** MSC, principal advisor, BUMED Code 07, Bureau of Medicine and

CAPT William D. Sullins, Jr., MSC

Surgery, Washington, DC, was born in Athens, TN. He attended Tennessee Wesleyan College and Southern College of Optometry and holds a B.S. and doctor of optometry degrees.

After 2 years of private practice, he volunteered and was commissioned a lieutenant junior grade in the Navy on 1 April 1966. Following indoctrination at the Naval School of Health Sciences, Bethesda, MD, he was assigned duty 1 June 1967 as an optometrist at NAS Albany, GA, with additional duty at the Marine Corps Supply Center, Albany.

Upon his release from active duty on 19 Dec 1969, he continued his early career as an optometrist providing primary eye care to NARDIV-B-1 NAS Atlanta, GA (1970-74) and NS-1008 NAS Atlanta, GA (1975-76). In addition to patient care, he began to assume commands serving as executive officer and commanding officer EPMU 2-108, NMCRC Atlanta, GA (1977-80); executive officer, Health Services Battalion, IV Force Service Support Group (IV FSSG), NMCRC Atlanta, GA (1980-82); commanding officer, Health Services Support Unit and health services support officer IV FSSG (1982-85); commanding officer, NR NAVHOSJAX-108, NMCRC Jacksonville, FL (1985-86); commanding officer, IV Medical Battalion, IV FSSG, 4th Marine Division, NMCRC San Diego, CA (1968-88)—commanding the first recommissioning since World War II; and executive assistant, OP-093R, NR OPNAV-093-106, Pentagon (1988-89).

CAPT Sullins attended the Landing Force Medical Staff Planning, Strategic Medical Readiness and Contingency Course. He was the first medical representative to the Marine Corps Reserve Officers Association, first MSC representative to the Naval Reserve Medical Dental Flag Council, and NMCRC Atlanta nominee for the Outstanding Officer in the State of Georgia, 1984. He is a life member of the Naval Reserve Association, member of the Association of Military Surgeons of the United States, and charter member of the Armed Forces Optometric Society. His awards include the Navy Commendation Medal, Fleet Marine Force Ribbon, National Defense Service Medal, and Armed Forces Reserve Medal.

CAPT Roger W. Triftshauser, DC

RADM-selectee **Roger W. Triftshauser,** DC, USNR, director of health services, REDCOM Five, was born on 13 Aug 1937 in Warsaw, NY. He graduated from Alexander High School, Alexander, NY, in 1954 and attended predental and dental school at the University of Buffalo where he received his D.D.S. degree in 1961. While at the University of Buffalo, he was accepted as an ensign in the Naval Reserve Program for Dental Officers.

Following graduation, he completed his internship at Chelsea Naval Hospital, Chelsea, MA. Subsequent assignments included USNS *Midway Island,* NAS Pt Mugu, and USS *Dixie* (AD-14). Upon release from active duty in 1967, he received a master's degree in orthodontics from Loma Linda School of Dentistry, Loma Linda, CA, in 1969. After reaffiliating with the Naval Reserve in 1970, he served at the Naval and Marine Corps Reserve Training Center, Buffalo, NY. These duties included dental officer, NR Training and Support Unit and commanding officer at NR DENTCO 3-6, NAVREGDENCEN 503, NRDC NORVAHQ 105, and NR NRDC 405. From 1983 to present, his assignments included COMNAVRESFOR Medical Support Team, and REDCOM Five staff dental officer.

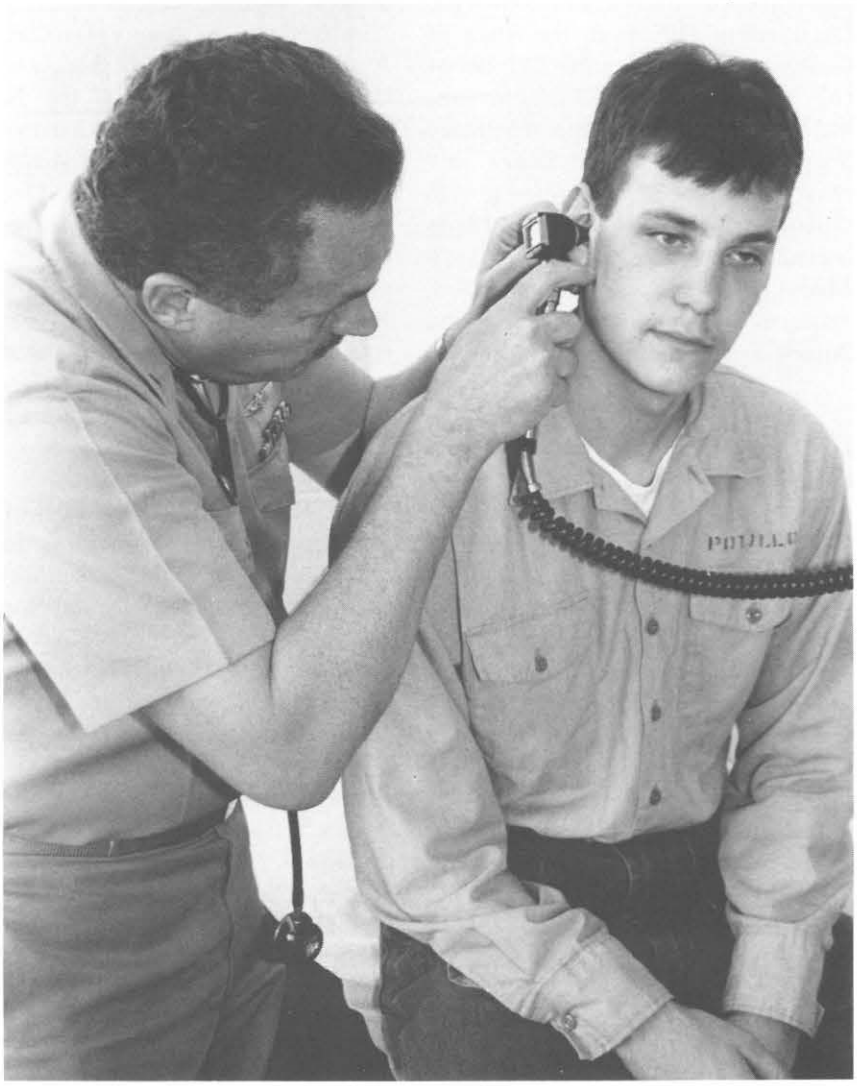
Dr. Triftshauser served as vice president of Health Services and Public Affairs, Reserve Officers Association, Association of Military Surgeons of the United States, and the Navy League. He coedited *Oakleaves and Acorns,* serves as a Naval Academy Information Officer and Dental School Liaison Officer, and serves on the RDAC Council, Buffalo, NY. He attended the Naval War College, Reserve Components National Security Course, and the Strategic Medical Readiness and Contingency Course. Most recently, he served as a member of the Secretary of Navy National Naval Reserve Policy Board.

Dr. Triftshauser is a member of the American Dental Association in which he served as a delegate and alternate delegate and the Dental Society of the State of New York. He is a past president of the Eighth District Dental Society, a fellow of the American and International College of Dentists, and a diplomate of the American Board of Orthodontics. His awards include two Navy Commendation Medals, National Defense Service Medal, Armed Forces Service Medal, and RADM J.H. Vaughn, Jr., Award as Reserve Dental Officer of the Year in 1980. □

NSGA Northwest "Hometown Doc"

LCDR Dan Wilbur, MSC, USNR

Photos by JO1 D.L. Kinder



Dr. Durham examines a patient . . .

The environment of Naval Security Group Activity (NSGA) Northwest is interesting and could be one of the Medical Department's best-kept secrets. Although difficult to imagine, this isolated duty station is a place in the Navy where a family physician could practice community medicine in a small town environment. Today, the opportunity to use the modern technology of medicine and to enjoy the old-fashioned benefits of a one-doctor operation is most uncommon. However, at the Branch Medical Clinic, NSGA, CDR Ralsa F. Durham, MC, or "Buz" as he is more affectionately known by his friends, runs the clinic and is a one-doctor operation. A 1971 graduate of the Medical University of South Carolina, Charleston, SC, Dr. Durham entered the Navy in 1982. Fresh beginnings were nothing new to this 43-year-old practitioner of family medicine who was the first doctor to establish an office in Coral Springs, FL, back in 1972.

After a stint in the Air Force and jobs in construction and iron work, Buz decided to pursue his lifelong ambition. He entered medical school at age 29, seemingly attuned to new beginnings even then. Early on he began to feel that family medicine was changing. "There are a lot of referrals in this end of medicine with specialists becoming more and more popular. I perfer to take care of the whole person."

. . . observes as Chief Moreno-Miller performs suturing techniques . . .

Feeling uncomfortable, Dr. Durham began to contemplate alternatives to an impending "burn-out." His consideration included more schooling, such as surgery or teaching. However, in the end his choice was the Navy. Beginning with flight surgeon training at the Naval Aerospace Medical Institute, Pensacola, FL, Dr. Durham had no idea that, ironically, the Navy would ultimately place him back in family practice with the responsibility for a very "special community."

Dr. Durham's "new family" lives on an isolated duty station in the southeastern corner of Virginia, within the city of Chesapeake. Situated on 4,500 acres of wooded farm and swamp land, the mission of NSGA Northwest is to provide a reliable and secure path for timely exchange of classified information among elements of the Defense Department as appropriate. This includes deployed fleet units and outstations of the High Frequency Direction Finding (HFDF) Network.

An environment that deals with classified communications produces an extra set of challenges for the Branch Medical Clinic staff. The round-the-clock requirement for absolute accuracy in communication serves to engender a variety of stresses in the activity's personnel. Recognizing its importance from his private practice, Dr. Durham ensures that his staff is clinically competent in identifying the early signs of stress. Frequently, an independent duty corpsman will present to the "Doc" a patient whose medical workup is negative but still seems "troubled" and just wants to talk.

The clinic's atmosphere is one in which the independent duty corpsmen are allowed to flourish. Each is encouraged to exercise his or her diagnostic acumen to the fullest prior to presenting their patients to Dr. Durham for review. In addition, they are encouraged to follow up on interesting cases previously referred into the larger and more equipped Boone Clinic. Continuing Medical Education (CME) is offered weekly at Boone Clinic for clinical personnel.

The need for medical support on this isolated base has grown with the evolution of its mission. On 11 July 1951, the Secretary of the Navy approved acquisition of land, through the condemnation process, for the future site of the Naval Radio Station (R) Northwest, to consist of 1,491.02 acres of land in Currituck County, NC, and 3,186.27 acres in Chesapeake. In 1951, construction began on the Naval Radio Station (R) Northwest.

. . . holds a morning brief at Branch Medical Clinic Northwest.

HMC Celso Garcia takes a patient's blood pressure.

The project was completed in March 1953. In 1960, work was completed on a new Wullenweber antenna system at the Naval Radio Station (R) Northwest and 2 years later work began on the Wullenweber Antenna Array that eventually cost over $4 million. The final building (#41), nicknamed *Shotgun*, was activated in 1964.

During the *Shotgun* construction period of the 1960s, Communications Security (COMSEC) began to emerge as a vital concern and an initial cadre of one officer and 11 enlisted personnel was created. The COMSEC provided communications security support from the shore in addition to going aboard various ships during fleet exercises.

In 1972, NATO authorized the construction of a NATO Satellite Communications Center on board Northwest. Further growth in the mission of Northwest could be seen 4 years later when the Coast Guard Communications Station, Portsmouth, VA, became a tenant activity of NSGA Northwest.

Currently, NSGA Northwest occupies 4,028.29 acres, approximately 1,100 of which are developed and have been cleared for roads, antenna fields, recreational facilities, and the administrative and housing complex.

Life at the branch clinic is indeed unique. Its small size is not always a problem for its innovative staff. Treating a case of chickenpox in a car outside the clinic is an example and makes for amusing discussion among mothers at the Navy Exchange. The small town environment means that medical followup is not always confined to the clinic but can occur while jogging or in the Bowling Center. The result is that Dr. Durham's staff enjoys a reputation of being professionals *and* trusted friends.

In addition to the responsibility for the "small town" of Northwest, Dr. Durham provides unique support to the Fleet Surveillance Support Command, a tenant command of NSGA. Approximately 1,200 miles southwest of Alaska on the island of Amchitka in the Aleutian Islands, the Navy is testing its new Relocatable Over-the-Horizon Radar System (ROTHR). A Navy branch clinic operates on the isolated island in support of this new Navy site.

HMC Deborah Moreno-Miller, an independent duty corpsman, rotates every 4 months between working on the island and in Dr. Durham's clinic. Due to phone congestion, HMC Moreno-Miller finds it easier to call Dr. Durham rather than the medical facility at Adak, Alaska. The chief is an expert in treating many of the psychological problems associated with such a remote duty station but enjoys the opportunity to present more complicated medical cases telephonically to Dr. Durham.

Reflecting back on his private practice in Coral Springs, Dr. Durham from Walterboro, SC, would have never believed that he would be providing medical care to patients in the Aleutians!

Computerized axial tomography, nuclear magnetic resonance, and position emission tomography are just a few examples of the escalating technologies in the medical world today. The science of medicine is continuing to obscure what was once the art of medicine. This evolution of technology has greatly expanded the number of testing bases that the doctor must employ to protect his patients and himself.

At Branch Clinic Northwest, the diagnositc tools are available in addition to sufficient time to practice the art of medicine. The patient can be evaluated as a total person with or without excessive diagnostic tests. The staff is taught that an accurate medical history is the roadmap that will ultimately lead to an accurate physicial assessment.

The medical world can be confusing at a large medical center with its plethora of diagnostic technology. Patients waiting in lines for tests and being ushered throughout the hospital make any thoughts of the old "hometown doc" unimaginable. However, at Branch Clinic Northwest, Dr. Buz Durham just keeps on jogging every day and does his best to maintain a personal touch with his patients, a relationship that earns him the title "Doc." □

When this article was written LCDR Wilbur was on active duty assigned to the Public Affairs Office (BUMED-OOP), Washington, DC 20372-5120.

Highlights From the Navy Medical Research and Development Command

Bethesda, MD

• New Technique Measures Divers' Respiratory System Impedance

For the first time, respiratory impedance, a major determinant of individual ventilatory capacity, has been measured in divers during hyperbaric conditions. A modified forced oscillation technique was used to quantify simultaneously the three parameters of respiratory impedance, i.e., resistance, inertance, and compliance. This noninvasive capability will be used to develop correlations among human respiratory characteristics, work output, mission endurance, and engineering specifications of underwater breathing apparatus (UBAs). Initially, it will be used to predict the outcome of manned testing of new UBAs. The short-term goal is to minimize the prototype UBAs. Ultimately, it is expected to yield information that will enable the selection of divers both for initial training and for specific missions, as well as the prediction of mission success likelihood, given the respiratory impedance of specific divers, the intended breathing gas mixture, dive profile, and the engineering characteristics of the particular UBA.

* * *

• RADHAZ Measurements Soon Will Be Easier

In the past, determination of hazards associated with radio frequency (RF) transmitters was obtained with a measuring system that sampled either the electric or magnetic field strength at a point and gave a reading of equivalent power density. This value was of little use to those working in occupational health and safety because it did not reveal anything about the actual absorption of RF energy by the body. In addition, typical Navy RF irradiation situations involve near-field exposures which further complicated the determination of energy absorption, and the operational commander had no concise information to ensure the safety of his crew.

Recently, a measurement system (U.S. Patent No. 4,813,789), developed at the Naval Aerospace Medical Research Laboratory, Pensacola, FL, was used to measure the amount of RF energy absorbed by a realistic, muscle-equivalent human model. The system uses calorimetric methods to produce a value of specific absorption rate (SAR). SAR is the future standard for nonionizing energy absorption measurement. Cumbersome, this measurement system is not easily transported. A more recently developed instrument, the RF current-to-ground meter, has shown real shipboard utility in the on-site measurement of RF current in exposed personnel. The easily obtained RF current-to-ground is directly related to the average, whole-body SAR. It will be relatively easy to determine compliance with RADHAZ regulations when a sufficient number of SAR-versus-RF current correlations are obtained. It is also apparent that previous standards for measuring RADHAZ areas were very conservative and may be decreased, allowing for more operation capability.

* * *

• Topical Antipenetrant for Schistosomiasis To Be Field Tested in Egypt

Approximately 200 million people annually are affected by schistosomiasis. This disease was responsible for over 80 percent of the medical casualties during the invasion of Leyte in the Philippines in World War II. The only method of prevention has been to avoid contaminated water, virtually impossible during military operations.

A recently developed niclosamide formulation has been shown to prevent skin penetration by the infective larvae of the schistosome parasite. This antipenetrant will undergo field trials in Egypt at the U.S. Naval Medical Research Unit No. 3 in a collaborative effort with the U.S. Army Medical Material Development Activity and the Egyptian Ministry of Health.

At the beginning of the 1991 rice-planting season 200 volunteer farmers from a region of the Nile Delta, where 40-90 percent of the population have schistosomiasis, will be treated to eliminate infections. When these volunteers return to the endemic area they will be enrolled in a double-blind, placebo-controlled trial to determine the effectiveness of the topical antipenetrant lotion.

For additional information on these or other medical R&D projects, contact NMRDC Code 40 at Commercial (202) 295-1468 or Autovon 295-1468.

A Nurses' Wellness Clinic

CDR D.D. Schafer, NC, USN
LCDR D.A. Vanlandingham, NC, USN
LCDR P.A. Millington, NC, USN
LCDR J.G. Fry, NC, USN (Ret.)
LCDR D.K. Herterich, NC, USN
LT V.G. Stephens, NC, USN

Navy nurses at the Naval Medical Clinic (NAVMEDCLINIC), Quantico, VA, have introduced a Wellness Clinic that promises to address many of the concerns facing Navy medicine today. The Navy Surgeon General urged members of the Medical Department to recoup CHAMPUS dollars, improve access to care, structure innovative health care delivery systems, and utilize the Navy's health professionals to deliver that care.(*1*) These directives placed increased emphasis on two major challenges facing Navy medicine, namely, an increased demand for services and shrinking health care resources. The key question: How do we achieve the Surgeon General's aims in light of these challenges?

The nurses at Quantico considered this question and saw opportunities to meet the challenges. They also recognized additional problems of concern to military medicine as follows:

- Fragmented health screening/promotion activities and health education.
- Underutilization of nurses as a resource to provide these services.
- Decreasing job satisfaction for nurses with their present role in the ambulatory care setting.
- Physician appointments filled by visits that could be shifted more appropriately to another level of care.

Further, they zeroed in on principal factors that have driven the increased demand for services—a burgeoning public awareness of the impact of lifestyle on health and heightened sensitivity among the population to diseases of self-control that have reached epidemic proportions. The idea of a health and wellness approach to health care delivery seemed to be the answer. Thus, Navy nurses entered into a cooperative/collaborative effort with the medical staff to establish a Wellness Clinic that is an innovative and cost-effective method of delivering patient care programs and services.

The Wellness Clinic features centralized and organized health assessment, health promotion, and education in the ambulatory setting. This modernization of outpatient care promotes health for maximum readiness of active duty members, their dependents, and retired beneficiaries. These programs parallel many revenue-generating services found in the private sector. The care is provided by nurses and nurse practitioners and is available by appointment, by group classes in some cases, and in others, on a walk-in basis.

Wellness Concept

The programs and services offered by the clinic are based on a wellness model of health, rather than on illness or disease. Wellness may be defined by degrees: "It is a variable state that is strongly influenced by personal choices and environmental factors. Wellness is being 'at your best' regardless of the circumstances in life."(*2*) Like a hot air balloon, wellness fluctuates between high and low levels over a person's lifetime.(*3*)

Under this model health is an individual responsibility. Proponents of the concept believe that the health care system (doctors, nurses, and other professionals) should provide information, counsel, and raise consciousness about issues related to health and well-being. However, individuals must make choices regarding lifestyle and health practices.

While new to the Navy, the concept of an independent, nurse-managed Wellness Clinic was adopted from the civilian community where these clinics have existed for years.(*4*) The opportunity for Navy nurses to define and expand their practice of nursing in an ambulatory setting is a source of job enrichment and professional fulfillment.

As independent, licensed health care professionals, nurses are uniquely educated and prepared to assess and evaluate the health care needs of clients. They are equally trained to conduct health education and promotion activities within the scope and practice of nursing.(*5*)

From Concept to Reality

The genesis of the Wellness Clinic at Quantico occurred over a period of approximately 18 months. First presented at a staff nurses' meeting, the concept germinated and took roots among the staff. A formal proposal to the commanding officer was submitted in January 1988 outlining the concept, plan, and program of services.

During the spring of 1988, two Navy nurses surveyed active duty service members to determine high-interest

health issues. This survey validated previous presumptions that certain health care practices needed to be encouraged through structured educational programs.

In the summer and fall of 1988, the nursing staff developed and initiated several classes and programs. These were low-cholesterol diet instruction, health classes for men and women, smoking cessation groups, healthy back classes, hypertension screening, and a cancer prevention and early detection program. These programs were advertised widely, based on previously-assessed needs in the primary target population, the active duty member. These formed the basic early working model for the Wellness Clinic concept.

In January 1989, NAVMEDCLINIC, Quantico established a Nurses' Wellness Clinic in an unused patient care area. Staffed by two family nurse practitioners, added services included PAP testing and contraceptive counseling, cholesterol screening, adult health screening, well-baby exams, diabetic education, and basic diet instruction. Patients and staff enthusiastically received these services.

The early success spawned new growth initiatives. In March 1989, Quantico closed its 24-hour Acute Care Service, realigned medical services, and opened a contract Primary Care Clinic. Capitalizing on this realignment of acute minor illness care, the freed resources allowed the command to increase the Wellness Clinic staff. Then in May 1989, the greater demand prompted a move to larger spaces.

In order to mark this successful innovation and to recognize those Medical Department officers who implemented the Wellness Clinic, the command held a formal "grand opening" on 12 May 1989 in conjunction with the Navy Nurse Corps' birthday. Since then the number of programs and services further expanded and now include:

- Smoking cessation groups.
- Weight control and nutrition classes.
- Stress management.
- Men/women's health classes (Topic presentations on: self-esteem, anatomy and physiology, sexually transmitted diseases, birth control, pregnancy and paternity issues).
- PAP clinics and contraceptive counseling.
- Cholesterol screening and diet classes.
- Adult health screening.
- Hypertension screening and education.
- Diabetic education.
- Healthy back classes.
- Well-baby, age-clustered, clinics.
- Pediatric basic life support and safety class for parents.

Cooperation has been a key principle during the development of the Wellness Clinic. Although independently structured, it is a collaborative practice with other professionals. It is not a substitute for other services. The Wellness Clinic is designed to facilitate comprehensive health care.

With marketing and referrals, requests for services from many work sites continue to increase. Employing the concept of a mobile training team, the Wellness Clinic is meeting many of the health educational needs of the community. The Wellness Clinic staff developed a close working relationship with the Family Service Center, Commissary Advisory Board, Command Alcohol and Substance Abuse Center, and active duty commands of Marine Corps Combat Development Command.

Conclusion

The response to the Wellness Clinic has been overwhelmingly positive. The staff of the Wellness Clinic is just beginning to discover and explore Navy nurses' potential by applying current nursing practice in an ambulatory care setting. The talent, skills, and expertise are already there; the opportunity and freedom to practice are the remaining ingredients.

Benefits of health promotion and prevention can be direct, indirect, tangible, and intangible. Improved job satisfaction, increased morale and productivity, reduction in turnover and absenteeism as well as reduced medical costs are positive results of helping beneficiaries attain their highest level of wellness. The Nurses' Wellness Clinic is providing the environment for these benefits. By increasing provider and patient satisfaction, a more positive image of the clinics, nursing, and Navy medicine can be attained.

Adhering to the premise that innovative ventures create reservoirs of potential, the tip of the iceberg has just been sighted. Data generated from wellness programs can be used in research, demonstration projects, and improving the merits of health promotion in an active duty setting. "Working smarter" allows the development of even more creative health care delivery systems from fertile resources as yet untapped.

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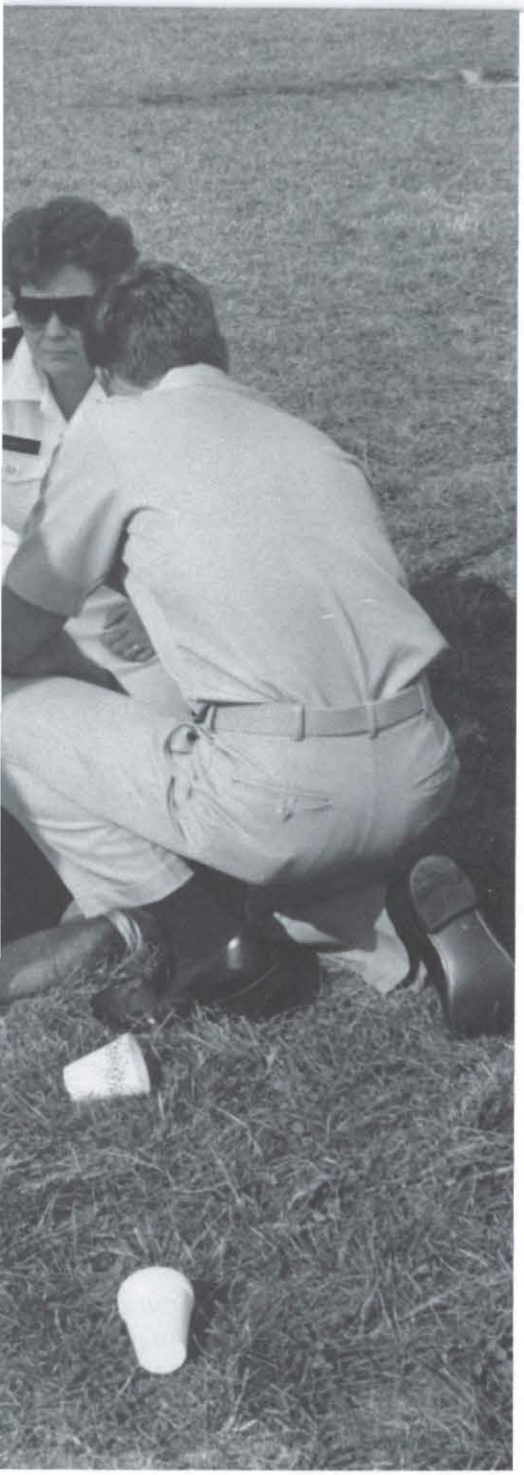
Medical Coverage of the Physical Readiness Test:

A Checklist

LT Gerald A. Strand, MSC, USNR



Medical assistance is instantly available to a member who has collapsed with suspected AMI.

At least one time each year, hundreds of thousands of sailors participate in a physical readiness test (PRT). The purpose of the Navy PRT is to determine physical readiness by evaluating such important fitness indicators as cardiovascular endurance, muscular strength and power, and participant flexibility and agility.(*1,2*)

Because the PRT is scheduled as an annual or semiannual event, there exists a possibility that some fitness gains developed in preparation for a

Checklist for Medical Coverage: The PRT

3 Months Prior to PRT:

—1. Risk Factor Screening/Physical Readiness Test Results form is distributed by the Command Fitness Coordinator (CFC) as per OPNAVINST 6110.1C.

—2. CFC verifies with the Medical Department that each member has a current physical examination on record.

—3. Medical Department assigns a senior HM, HMC, or HMCS (E6-E8) to coordinate (Medical PRT Coordinator—MPRTC) the overall PRT medical coverage planning and implementation process with the CFC.

—4. MPRTC develops a preliminary written plan describing PRT medical coverage recommendations to be circulated for review and comment.

2 Months Prior to PRT:

—1. MPRTC provides a completed written plan describing PRT medical coverage to the senior medical officer for *approval.*

—2. MPRTC provides a copy of the approved plan for PRT medical coverage to the CFC and designated appropriate others.

—3. MPRTC assigns Medical Department staff specific PRT responsibilities, as identified in the approved PRT medical coverage plan.

- —a. Physical Exams
- —b. Emergency Equipment
- —c. Refresher Training
- —d. Personnel
- —e. PRT Event Control
- —f. On-Site Implementation
- —g. Emergency Transportation
- —h. PRT Record Keeping

—4. MPRTC and CFC make preliminary arrangements for PRT location.

- —a. .25 Mile Track
- —b. Telephone Access
- —c. Water Source
- —d. Ambulance Access
- —e. Warm-Up Area
- —f. Warm-Down Area

—5. MPRTC and CFC make preliminary schedule of PRT events.

- —a. Sit-and-Reach
- —b. Sit-Ups
- —c. Push-Ups
- —d. 1.5 Mile Run/Walk

—6. MPRTC and CFC make a preliminary decision concerning the number of participants who, at one time, will be allowed to take part in each scheduled PRT event.

1 Month Prior to PRT:

—1. MPRTC assesses status of responsibilities assigned to Medical Department staff and reports findings in writing to the senior medical officer.

—2. MPRTC and CFC finalize PRT location, scheduling of PRT events, and arrangements for linking with civilian emergency medical services (if necessary).

—3. MPRTC assesses and assures readiness of the medical equipment to be used in the field.

—a. Oxygen Cylinder
—b. Airway Devices
—c. Unit One Bags
—d. Walkie-talkies
—e. Water Containers
—f. Stethoscopes
—g. Sphygmomanometers
—h. Splints (Air, Other)
—i. Blankets
—j. Stretchers

—4. MPRTC schedules refresher training in emergency medical care for all medical personnel assigned to monitor PRT events.

—a. CPR
—b. Airway Management
—c. Heat Cramps
—d. Heat Exhaustion
—e. Heat Stroke
—f. Strains
—g. Sprains
—h. Simple Fractures
—i. Cold Exposure
—j. Syncope

1 Week Prior to PRT:

—1. MPRTC and CFC finalize medical coverage plans for PRT.

—a. Timeframe
—b. Schedule of Events
—c. Telephone Access
—d. Water Source
—e. Ambulance Access
—f. Emergency Protocol
—g. Medical Personnel
—h. Environment/Climate Assessment
—i. Chain of Command

—2. MPRTC assesses status of refresher training and assures satisfactory completion before PRT.

—3. MPRTC reviews and approves operational assignments and locations of medical personnel monitoring PRT events.

—4. MPRTC and CFC finalize the number of members allowed to participate, at one time, in each PRT event.

—5. MPRTC gathers together emergency equipment to be used in the field.

—a. Oxygen Cylinder
—b. Airway Devices
—c. Unit One Bags
—d. Walkie-talkies
—e. Water Containers
—f. Stethoscopes
—g. Sphygmomanometers
—h. Splints (Air, Other)
—i. Blankets
—j. Stretchers

—6. MPRTC gathers together miscellaneous items for PRT.

—a. Rubber Gloves
—b. Paper Cups
—c. Paper Towels
—d. Cloth Towels
—e. Ice Containers
—f. Cold Packs

Medical personnel stand by during run.

particular PRT, may be diminished or lost prior to the administration of the next PRT. According to Parrish and Gustin:

Cardiovascular endurance capacity is lost very rapidly when regular exercise is stopped. Inactivity causes lesser effects on strength, power, muscular endurance, speed, agility, and flexibility. Flexibility is lost quickly but can be reattained in a relatively short time. Strength, power, and muscular endurance have been shown to be retained in the trained individual up to 6 weeks. Fifty percent of the strength gained will be retained for up to 1 year after cessation of training.(3)

Inactivity between PRTs can also lead to higher levels of body fat and unfavorable lipoprotein-lipid profiles. (*4*) Although it has been reported that a body fat measurement is a better predictor of physical readiness than performance in either a PRT or a 1.5-mile run, it is generally accepted that while body fat measurement is a good predictor of a score on a PRT, it is not a good predictor of failure on the PRT.(*3,5,6*)

To reduce a member's risk of cardiovascular damage and/or general body injury, the Navy has determined a body fat measurement that precludes participation in the PRT and, in particular, in the 1.5-mile run ($\geq$26 percent for males and $\geq$36 percent for females).

Unfortunately, quality supervision of the body fat measurement process is not guaranteed and not all persons tasked with making body fat measurements are trained to do so. Therefore, incorrect body fat measurements are recorded, both intentionally and unintentionally. As a tool used to screen out high-risk individuals from participating in the PRT, the body fat measurement process is not fail-safe.

A Risk Factor Questionnaire is also used as a screening device to alert medical personnel of possible contraindicators to PRT participation. An individual answering "Yes" to any question is, automatically, referred to Medical for additional evaluation. Members worried about their eligibility to remain on active duty or in the Reserves have been known to answer questions "No," even when a "Yes"

Day of PRT:

—1. MPRTC supervises inventory and transport of all equipment to PRT site.

—2. MPRTC supervises overall implementation of PRT medical coverage.

—3. MPRTC reports readiness to begin the PRT first to the senior medical officer on-site and then to the CFC.

—4. MPRTC and CFC secure the PRT.

Selected Recommendations

1. Hospital corpsmen should be stationed in positions to observe *each* PRT event.

2. No fewer than seven hospital corpsmen with EMT certification should be stationed at intervals around the running track.

   a. Corpsmen should stand in a position offering the best view of the runners/walkers. This may mean standing on the infield or on the outer ring of the track to prevent sunlight from reducing the corpsmen's vision.

   b. Corpsmen should feel free to inquire about the status of any member observed to be experiencing difficulty as he/she is running/walking.

3. *After* completing the run/walk, all PRT participants should warm-down in a designated area easily observable by one corpsman.

4. Two teams of two corpsmen each should be assigned as Primary Teams in the event of an emergency situation.

   a. Primary Teams will be composed of corpsmen stationed at each end of the running track. When a member is observed in trouble, the nearest corpsman yells out "corpsman!" and the Primary Team immediately comes to provide aid.

   b. The run/walk event is stopped, immediately.

   c. All members are kept away from the patient and Primary Team by other corpsmen standing ready to assist.

5. At least two Medical Department officers (MD, RN, or EMT) should be assigned as "floaters." They should remain on the infield of the track and, if feasible, at opposite ends.

6. The corpsman or medical officer most qualified to provide prehospital emergency care should be stationed at the finish line of the run/walk event. It is important to note that this individual may be a physician, nurse, Medical Service Corps officer, or corpsman. Ego should not get in the way of selecting the person most qualified to stand this important watch.

7. All medical personnel should be instructed to ***never leave their stations except in the case of actual emergency.*** If a member appears to be in discomfort during or after the run/walk, another participating member should be assigned to watch the member in question. If an emergency should appear imminent, the "buddy" member should be instructed to yell "corpsman!"

8. If the PRT is being conducted in bright and hot sunlight, the MPRTC should make provisions to provide an area of shade.

9. All medical personnel monitoring the PRT should refresh their stretcher-carrying skills.

10. All medical personnel should be reminded that patients have the right to expect confidentiality. No one should discuss the patient's condition, prognosis, diagnosis, or treatment with any members present at the PRT.

11. ***Let nothing go unrecorded . . . write it down.***

response was more appropriate.(*7*) This situation is not news to medical personnel or to Command Fitness Coordinators (CFCs).

The implication of declining fitness indicators between PRTs, the possibility of inadequate quality control of the body fat measurement process, and a natural inclination to avoid "Yes" answers on the Risk Factor Questionnaire means there is an unknown number of "high-risk" sailors participating in each PRT who are not fit for strenuous exercise, especially the competitive exercise that is innate to the PRT. As such, excellent medical coverage of the PRT process is essential.

The possible inclusion of unknown high-risk participants in the PRT is only one reason for exercising care in the provision of sound medical coverage. At least two additional reasons need mention: PRT environmental factors and unanticipated emergencies in an apparent low-risk population.

While no research has indicated any serious problems with the environmental conditions under which PRTs have been administered, some precautions seem warranted. It is common medical protocol to advise that PRTs be conducted under safe weather conditions (comfortable temperature, acceptable humidity) and at least 3-4 hours after the last meal. For middle-aged participants who are usually sedentary, a period for stretching and warming-up is recommended. Of course, the running track should be safe, a warming-down area available (and easily observable), two-way emergency communications on hand, appropriate emergency equipment on-site, water and cups easily accessible, and a sufficient number of EMT-certified corpsmen or medical personnel on hand to meet unanticipated challenges. Unfortunately, these common-sense environmental precautions may not be strongly advocated by Medical or taken seriously by the line. A PRT conducted under conditions where any or all of such precautions are nonexistent, is an accident waiting to happen. (*7,8*) Medical should either stop the PRT or require excellent medical coverage be provided.

Situp event is observed by three corpsmen and the unit CO. Note emergency equipment in the foreground.

Lately, unanticipated emergencies can occur with seemingly low-risk populations. During the PRT in which the medical coverage checklist presented in this article was field-tested (October 1988), five members under the age of 25 succumbed to symptoms of heat exhaustion (n=1), heat cramps (n=2), a severe migraine headache, and an asthma attack. One member (age 47, 20 percent body fat [July 1988], answered only one "Yes" response [question #7] on the Risk Factor Questionnaire)* completed the 1.5-mile run in qualifying time, in 80 degree heat and 70 percent humidity, 2 hours after a heavy lunch. Upon finishing the run, he suffered a suspected acute myocardial infarction (AMI). He collapsed unconscious to the infield where he was immediately attended by a medical officer, an emergency room nurse practitioner, two certified EMTs, and a certified paramedic. He was stabilized for 45 minutes and then transferred to the hospital by a local rescue squad. He was admitted to the coronary care unit (CCU) per AMI protocol for 1 day and, subsequently, observed 2 additonal days before discharge (see Medical Evaluation for [OBO]).

Because of his "Yes" response to question #7, he was evaluated by the senior medical officer to determine suitability for PRT participation. Upon review of his Risk Factor Questionnaire, reevaluation of his body composition measurements, and a personal interview, he was not identified as high-risk and, therefore, the probability of an untoward event was acceptably low (in Cooper's classification system he scored in the "good"

*Question #7: Are you 40 years old or older and not accustomed to vigorous exercise?

Medical Evaluation for (OBO)

15 Oct 1988

This 47-year-old enlisted USNR member with 19 years service was admitted to the Coronary Care Unit (CCU) of (OBO) Hospital . . . . for observation following completion of his annual physical fitness training on 1 Oct 1988. The patient successfully ran his 1.5 mile track when he collapsed with loss of consciousness and suffered a brief grand-mal seizure.

He was admitted to the CCU per acute myocardial infarction (AMI) protocol, and AMI was ruled out by serial enzyme analysis. Serial EKGs were performed, and there was no evidence of change. There was, however, evidence of ischemia consisting of a left anterior hemiblock and pathologic left axis deviation. The EKG was further suggestive of recent septal infarction with additional ischemic changes. The patient smokes two packs a day and has been a heavy smoker for decades. He suffered rheumatic heart disease as a child and demonstrates a faint systolic murmur, which did not change qualitatively during his hospitalization. The only hematologic abnormality was a HCT of 51 percent.

The patient was seen by a board-certified cardiologist who concluded that there was no evidence of heart attack, but that the syncopal episode was "physiologic" in origin and resulted from "the patient's generally poor physical condition."

Assessment

- The patient clearly suffers from the ravages of years of smoking. The elevated HCT and findings through auscultation bear this out. The history is most consistent with a brief vasovagal episode with transient cerebral ischemia resulting in a brief tonic-clonic seizure. Preexisting myocardial damage was discovered concurrent with obstructive lung disease secondary to heavy smoking.
- The findings of ischemic heart disease concurrent with obstructive lung disease comes as no great surprise.
- The assessment by the cardiologist that the patient is in "generally poor physical condition" is valid and given the severity of this episode, we cannot . . . . allow this member to undergo routine physical fitness training in the future.
- With the above factors considered, [there] is no alternative but to place the patient on limited duty pending reevaluation and observation. He cannot be considered eligible for worldwide deployment status . . . . it seems appropriate to keep him on this limited duty status until he can finish his last few months, permitting retirement. He has been a valuable member of the unit and is in no danger performing minimally taxing duty at (OBO).
- (OBO) has been advised of the above situation and understands the compelling need to stop smoking . . . . he will be reevaluated medically in 90 days. If there has been significant improvement, we can reconsider the need to medically discharge this member. If there has been no significant improvement, we are compelled to seek discharge on a medical basis.
- Overall, it is an expectation that [the USNR] will probably need to proceed with separation and, in so far, as that cannot be accomplished prior to his expected retirement date . . . . there is no danger in keeping him on limited duty until retirement.

category).(*9,10*) Fortunately, this member's unpredictable collapse was met, head-on, by excellent planning and immediate medical coverage. Although AMI was eventually ruled out by serial enzyme analysis, the competent medical coverage available at the PRT demonstrated Medical's significant role in coping with unexpected emergencies and in preventing the waste of life associated with AMI. (*7,11*)

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The Efficiency Review in Determining Manpower Requirements

LCDR Bill Whalen, MSC, USN

"It is Navy policy that only approved manpower requirements will be included in the Program Objective Memorandum (POM)."(1)

Background

The Department of Defense (DOD) remains committed to ensuring that scarce manpower resources are allocated in the most efficient and effective manner. The Navy's new decentralized Shore Manpower Requirements Program is designed to identify and validate detailed quantitative and qualitative manpower requirements for all Navy shore activities. The centerpiece of this new program is the Efficiency Review (ER) which is now the responsibility of each manpower claimant (i.e., BUMED, NAVSUP, NAVAIR, CINCPACFLT, etc.).

An ER is a *process* to ensure that operations are being effectively and efficiently performed with minimal resource (primarily manpower) consumption. ERs employ a structured and disciplined approach to establish the most efficient organization (MEO) or the MEO requirements for each Navy activity. DOD and the Department of the Navy have stated that ERs are to be completed for each Navy shore activity by October 1994. Manpower requirements, manpower authorizations (military billets and civilian positions), and manpower/personnel budgets will be based on the most recently implemented ER.(2)

The purpose of an ER is to assist the commanding officer in identifying all work that needs to be done and the total manpower resources needed to do the best job. This process will identify the MTF's (military treatment facility [medical, dental, or mission-specific command]) manpower requirements to provide the best total health care to our beneficiaries at the lowest cost. These requirements will be based on work accomplished within the facility, by NAVCARE/contractors, and unmet demand (CHAMPUS).

An ER will first identify what work is to be done in measurable terms (Performance Work Statement). After specifically identifying those functions for which there is demand, an ER study will establish a command's baseline manpower requirements. With this baseline, the commanding officer can allocate/realign manpower resources within his command, prioritize his requirements for additional manpower resources, and evaluate performance based on output and standards.

The importance of establishing verifiable manpower requirements is illustrated in Table 1. As shown, valid peacetime manpower requirements justify the establishment of military billets, civilian positions, or contracts for service. Mobilization manpower requirements are determined, validated, and documented using a separate planning system.

Once valid requirements are identified, funded requirements or authorizations can then be established and manned with personnel appropriate to accomplish the intended mission or tasking. Without valid requirements, existing authorizations are subject to reprogramming (or movement) within or to another MTF where verifiable requirements do exist. As indicated in the opening quotation, unvalidated peacetime manpower requirements may also jeopardize emerging medical and dental authorizations when compared with other resource/warfare sponsors' requirements during budget negotiations within the Navy.

Prior to the establishment of the Navy Manpower Analysis Center (NAVMAC), the Navy Manpower

TABLE 1
Navy Manpower/Personnel Process

Policy Decision
↓
Determine Requirements
↓
Establish Positions/Billets
↓
Hire/Detail Bodies

Engineering Center (NAVMEC) and its eight detachments performed comprehensive, Navywide ERs and developed staffing standards. NAVMAC has recently been reorganized, its eight detachments disestablished, and ER and staffing standard development functions transferred to the claimants. Staffing standard development for Navy medicine is being performed by DOD with tri-service participation.

To accomplish this newly assigned ER function, each claimant was tasked by CNO to establish an ER schedule for fiscal years 1989-94, develop and submit a plan to execute this schedule, identify the level of effort (man-years) and dollar resources necessary to implement the plan, and provide annual progress reports.(*3*) A variety of plans emerged from different claimants to accomplish this ER function. These plans included realigning and dedicating manpower resources to perform ERs, performance by field activities, utilizing other program resources (i.e., commercial activity (CA), contract), and adapting other methods such as Overhead Budget Management (OBM) to this process. (*4*)

ER Study

An ER study is a top-to-bottom review of an entire activity by Parent Unit Identification Code (PUIC), which includes subordinate or satellite facilities, and is to be performed at least once every 5 years. These studies will document the minimum qualitative and quantitative manpower requirements for each function (i.e., clinic, department, etc.) in an MTF.

Each function is to be reviewed independently for internal efficiency and concurrently with other organizational components for cross-organization efficiency. Functions covered by CA studies are not to be restudied and should be included in the ER MEO.(*5*)

The end product of an ER study is a specific list of qualitized (i.e., by rank/rate/grade, NOBC/NEC/series, etc.) manpower requirements for each function being performed at the facility. This qualitized list of requirements is referred to as the activity's MEO.

An ER study is not complete until manpower change requests (OPNAV 1000/4As) have been submitted and approved by CNO (OP-12) to align the MTF's billet file with the MEO determined in the ER study. Additional improvement recommendations should be implemented, where practicable, at the earliest possible date.

How to Do an ER Study

The MTF's first step in performing an ER is to receive training. NAVMAC provides a schedule of manpower training courses (*6*) on a semiannual basis. To perform an ER, the most important of these is the 2-week Efficiency Review for Analysts/Team Leaders Course. Without this specific training, it is very difficult for the MTF to complete an ER report correctly.

Various manpower requirement documentation processes are available to justify and document manpower resources. Staffing standards, work measurement (work sampling, operational audit, group timing techniques, etc.), and method improvement/study techniques (flow process chart, system process chart, work distribution analysis, etc.) are but a few. Of these processes, Navy staffing standards and DOD manpower guides (formerly staffing standards), *where available,* are the preferred and recommended methodology for documenting manpower requirements.(*7*)

Navy staffing standards and DOD manpower guides are valuable tools to perform ERs. They may also be the easiest methodology to use. For example, if a facility with ten functions performs an ER and six of these functions have an associated staffing standard/manpower guide, then manpower requirements for these six functions are usually documented easily. Simply combining the available staffing standards/guides with their appropriate projected (which includes an estimate of demand, CHAMPUS, NAVCARE) workload, such as clinic visits, occupied bed days, etc., documents peacetime manpower requirements. A brief analysis of these results plus documentation of any unique or special factors (i.e., exceptions, additives, special circumstances) completes the process.

For those functions where staffing standards/guides, CA studies, or other manpower requirements analyses (i.e., civilian guidelines such as the Joint Commission for the Accreditation of Hospitals [JCAH], medical association standards, etc.) are not available, another acceptable methodology must be used to determine manpower requirements. Most frequently, MTFs will use operational audit. Operational audit essentially

TABLE 2

An Efficiency Review report includes:

1. Performance Work Statement(s).
2. Implementation plan for achieving the most efficient organization (MEO).
3. Schedule and plan for establishing, revising, and maintaining labor and staffing standards (as appropriate).
4. Projected changes in the cost of operations when ER recommendations are implemented.
5. Summary of savings identified during the ER.
6. Narrative justification for assignment of military essentiality codes (MECs) to military billets.
7. Cost of conducting the ER study.

involves a facility's best estimate of their manpower requirements to perform a particular function based on projected workload.

ER Report

An ER report is the written product of an ER study. Elements necessary to complete an ER report are displayed in Table 2. The ER report is forwarded via the chain of command to CNO (OP-12) via the Bureau of Medicine and Surgery (BUMED). ER "savings" identified may be reprogrammed within the facility or to another facility within BUMED. Unfunded requirements, on the other hand, will be given full consideration by Navy in the Planning, Programming, and Budgeting System (PPBS). Nearly $1 billion in CHAMPUS costs in 1989 suggests significant unfunded requirements, but is not a clear indication of whether existing resources are always being used as efficiently as possible.

Present Status

The requirement to conduct ERs now is pressing with CNO closely monitoring claimants to ensure an ER process is being implemented to achieve a 20 percent annual goal. For BUMED, the reorganization of Navy medicine opened new possibilities for establishing and resourcing a program infrastructure to accomplish ERs within our claimancy. BUMED's ER plan of action (*8*) and milestones (POA&M) are briefly presented in Table 3.

Of particular interest to MTFs is the ER for Managers Brief videotape available at Healthcare Support Offices. This videotape (*9*) provides an excellent overview of the ER process for a command's senior managers. In addition, Branch Dental Clinic, Quantico, VA, and Naval Hospital, Patuxent River, MD, are performing ERs for subsequent distribution to all MTFs. These "model" ERs will provide an excellent example of a complete ER.

TABLE 3
Efficiency Review POA&M

ER Plan

- *MTFs/DTFs* identifying ER POC, schedule ER performance with HSO, receive 2-week ER training, perform ER, submit ER report to BUMED via HSO by October 1994.
- *HSOs* coordinate submission/update of activity ER schedule, coordinate activity training, monitor/assist activities with ER performance, and review/forward ER reports.
- *BUMED* performs HSO functions for mission-specific commands, review/forwards ER reports, and reports Claimant 18 ER performance to CNO.

ER Milestones	*Date*
• BUMED ER plan distributed—letter to all commands.	3 Nov 1989
• HSO ER schedules submitted to CNO by BUMED.	28 Feb 1990
• ER for Managers Brief videotape—message to all commands.	7 March 1990
• NAVMAC training schedule for second half FY 90—message to all commands.*	8 March 1990
• HSOs to coordinate ER training—letter to all commands.	12 March 1990
• Model ER for dental begins.	15 March 1990
• Model ER for medical begins.	5 April 1990
• 25 DOD staffing guides promulgated.	April 1990

*Only three ER for Analysts/Team Leaders courses scheduled for second half FY 90 for all Navy.

Summary

Validated manpower requirements support authorizations and subsequently the personnel who fill these military billets and civilian positions. ER is the Navy's chosen methodology to document these manpower requirements at least once every 5 years. Failure to perform ERs will jeopardize emerging manpower requirements in the budget process. Navy and DOD staffing standards/guides are the preferred tools in performing an ER. BUMED's present plan to perform ERs is for the facility to review training, perform an ER, and submit the ER report via the chain of command.

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Urological Injuries in War and Peace

Contrasting Dilemmas in Quality of Care

Part II: The Differing Requirements of War

CAPT Arthur M. Smith, MC, USNR

Changes in the Scope of Injury

Penetrating wounds are the "sine qua non" of battle injuries. (A reduced proportion of blunt trauma is still seen, however, mainly sustained while exiting from helicopters, or during airborne operations, helicopter crashes, and vehicular accidents.) Both high- and low-velocity gunshot wounds are common, as well as multiple fragment wounds from grenades, mines, mortars, and artillery shells.

One of the principal differential points contrasting civilian and wartime urological management is that the devastating energy release into wounds from high-velocity missiles, and the multiplicity of wounds experienced by any one casualty from "improved fragmentation device" weapons (cluster bombs, fleshette weapons, etc.), inevitably means that when genitourinary injuries do occur, they will commonly be accompanied by a host of other severe injuries. This impacts significantly upon the nature and scope of management procedures for these wounds.

Diagnostic Compromises

In any given patient with multiple injuries, prioritization of effort in both evaluation and treatment is deferred to the demands of the most physiologically destabilizing wounds. Consequently, there may be insufficient time available for complete diagnostic evaluation prior to resuscitative maneuvers and emergency surgery.

In the sphere of genitourinary evaluation, the retrograde urethrogram, cystogram, and IVP, as well as CT scan and retrograde pyelography may give way to the simple and straightforward field medical diagnostic dictum, "A finger or a tube in every orifice." Similarly, the press of large

numbers of patients awaiting entry to a surgical suite for life-threatening unstable injuries may preclude a detailed and time-consuming intraoperative exploration for every area of potential anatomic violation.

In essence, calculated compromise, relative to civilian standards, becomes mandatory. Compulsive adherence to civilian peacetime diagnostic protocols may severely compromise the combat casualty's condition and actually produce a lower quality of care.

Impact Upon Kidney Salvage

In one Vietnam study, 74 percent of patients with kidney injuries required blood transfusion, and this averaged 11.68 units per patient. Many arrived in shock. Furthermore, concomitant injuries to the liver occurred in 36 percent, colon in 31 percent, spleen in 28 percent, small bowel in 20 percent, and stomach in 11 percent of patients.(*6*) History has shown that, short of a minor debridement for a superficial kidney wound, nephrectomy is the option most commonly exercised in this setting by the general surgeons charged with operative responsibility for renal injuries. Why?

Nephrectomy is preferred primarily because the wound cavitation effects of high-velocity projectiles create large wound tracts, extensive tissue necrosis, and extensive shattering of renal parenchyma.(*7*) Aside from the expenditure of valuable time in attempting to repair a major kidney injury (should the organ even be potentially salvageable), the potential always exists for secondary difficulties in the postoperative period. Many of such patients could not easily withstand the stress of additional complications, given the extent of their collateral injuries. A urine leak from a salvaged kidney might develop within the retroperitoneum, or a secondary hemorrhage from a raw kidney surface might evolve while in the evacuation chain. (The potential for bleeding is increased even further by the multiple blood transfusions that are commonly administered for combat injuries.)

The foregoing considerations must inevitably influence intraoperative decisions relative to kidney preservation (unless one is dealing with a solitary kidney). The validity of these concerns were amply demonstrated during the Vietnam conflict. At hospitals in Japan and the Philippines, stopover points in the casualty evacuation chain, many patients who had undergone partial nephrectomies and kidney laceration repairs in Vietnam experienced an extraordinarily increased proportion of postoperative infectious and fistulous complications, requiring secondary nephrectomy.

Furthermore, the need to enter patients into protracted evacuation chains, whether by land, air, sea, or any combinations thereof, without great depth of nursing and medical support, raises real questions concerning the advisability of installing external urinary drainage nephrostomy tubes from repaired kidneys. Such tubes could easily become displaced while in transit and could not generally be replaced in time. Their slippage might well contribute to major complications and even death from sepsis or hemorrhage. Could internal splinting within the urinary collecting system obviate the need for external tubes? Perhaps, but their patency in the face of recurrent bleeding would create major danger for patients in the midst of a prolonged evacuation chain.

Further complicating the renal injury problem was the experience at USAF Hospital Clark Field, Philippines, where even patients who had undergone total nephrectomy alone demonstrated a significant number of flank infections. Adequate drainage of these areas is obviously mandatory, but historically has often been forgotten.

Problems With Uretheral Injuries

Without the availability of excretory urography (IVP) and cystoscopic facilities for retrograde pyelography, penetrating wounds of the ureter are difficult to diagnose preoperatively. In one assessment of mortality data covering World War II, Korea, and a span of time in Vietnam, remarkably high mortality rates for wounds of the ureter were noted.(*6*) In the Vietnam study, the highest mortality rate among abdominal wounds was that associated with wounds of the ureter—10.5 percent. (Furthermore, 78.9 percent of patients with ureteral injuries required blood transfusions, and the average amount given was 14.8 units per patient.) Whether the deaths can be explained by the high incidence of delayed diagnosis with concomitant extravasation of urine, or by the incidence of other major injuries associated with ureteral injuries, is difficult to determine. A total of 63 percent of ureteral injuries, however, were associated with small bowel injury, and 37 percent with colonic trauma.(*6*) It is not surprising then, that when patients with ureteral injuries were received at one large hospital in Japan following initial surgery in Vietnam, fully 82 percent developed complications.

Following the same guidelines as outlined for ureteral injuries in the civilian sector, the use of debridement, spatulation, watertight closure, internal splinting, and extensive area drainage are mandatory steps in repair of the upper three-quarters of the ureter. If limited time and a deteriorating general condition of the patient warrant rapid completion of the operative procedure, the proximal ureter may be brought out and affixed to the skin, if long enough, pending more definitive disposition of the kidney and ureter at a later date. Often, such cutaneous ureterostomies require intubation with a rubber catheter in the immediate postoperative period. With regard to the use of nephrostomy tubes for those situations where a higher level of more proximal urinary drainage is elected, the same caveats exist relative to their use in protracted evacuation chains.

Rules relating to the lower one-quarter ureteral injuries are the same as those utilized in peacetime. Nevertheless, with a ureteral lesion in that location, the multiplicity of other organs potentially injured will place time constraints

upon any protracted ureteral repairs, other than direct splinted reimplantation into the bladder, or a cutaneous ureterostomy. Extensive drainage of the operative area is mandatory, in view of the profound deep pelvic wound infection rates after these injuries. Occasionally, breakdown of ureteral repairs have been noted in association with breakdown of gastrointestinal anastomoses. Spillage of urine and bowel contents into the abdomen has led to disastrous consequences. Periodically, then, one must consider nephrectomy in the setting of massive combined colon and ureteral damage, assuming the presence of a normal contralateral kidney.

Injuries of the Bladder

In one Vietnam study, 49 percent of bladder injuries were associated with large bowel injury, the rectal and rectosigmoid components predominating. Furthermore, 51 percent also had small bowel injury. Blood transfusion was necessary in 69 percent of them, and the average amount administered was 10.5 units. Deaths occurred in 9.7 percent of patients with bladder injuries.(*6*) In one report, cystograms were rarely performed, and bladder injury was clinically suspected in those patients who had experienced penetrating abdominal or pelvic injuries and had a bloody return following urethral catheterization.(*7*)

Invariably, in the intraoperative setting, bladder perforations are debrided, the walls closed with varying layers of absorbable suture, and drained with either suprapubic cystostomy tubes, urethral catheters, or both (the simultaneous use of both tubes being additional "insurance" if one became occluded by blood clot or dislodged in the evacuation process).

On occasion, due to the massive tissue destructive energies of high-velocity weapons, significant amounts of bladder wall may be destroyed (some cases were reported to have lost as much as 80 percent), making closure more difficult. If the lower trigone portion of the bladder (where the ureters enter into it) has been injured, the efflux of urine from the ureteral orifices is a sure sign of the intactness of the ureters above the trigone. Furthermore, splinting ureteral catheters may be required to facilitate continuity between ureters and bladder during convalescence. Finally, following generous extraperitoneal debridement and tissue drainage around the bladder, meticulous fixation of all external urinary drainage tubes is mandatory because of the hazards of the evacuation process.(*7*)

Bladder injuries are often rendered complex by virtue of adjacent organ damage and the tight intrapelvic location of the lesions. Many lessons were learned in followup care of these injuries within the evacuation chain during the Vietnam campaign. A high rate of pelvic abscess, fistula, and pelvic girdle osteomyelitis complications were noted among these patients. Retrospective review reinforces the necessity for extensive pelvic drainage, debridement of loose bone fragments, and possibly even coccygectomy for optimizing the adequacy of drainage. Furthermore, colostomies must be done for any question of associated injury to the rectum and adjacent lower bowel.

Injuries of the Prostate Gland

Injuries of the prostate gland, although not common in the peacetime practice of medicine, create rather dramatic and difficult problems in war.

In 1969, Salvatierra reported 8 prostatic injuries from combat.(*7*) They were all characterized by severe anatomical derangement and severe bleeding. In one patient, the prostate was described as having been completely destroyed, with the bladder devoid of distal attachments. In two other patients, the base of the prostate and proximal prostatic urethra were destroyed, with the bladder completely avulsed from the prostate. In yet another case, a 1 cm entrance wound in the buttocks was associated with a 9 cm exit wound in the groin, with urine and small bowel contents emanating from the exit wound. The rectal wall was contused, 85 percent of the bladder wall was destroyed, and its surviving remnant was completely separated from the prostate, the proximal half of which was completely destroyed. Furthermore, the right pubic bone was blown out.

Acute surgical management, in all cases, consisted of hemorrhage control (occasionally with bilateral hypogastric artery ligation) and reestablishment of the continuity of the urethra. Obviously, extensive tissue drainage and management of collateral bowel and vascular injuries requires a formidable expenditure of time and resources. Could this be accomplished in a resource-poor environment? Probably not!

Management of Injuries to the Urethra

Diagnosis of an injury to the membranous urethra, the portion passing through the urogenital diaphragm, may be exceedingly difficult without a retrograde urethrogram X-ray. Although this is commonly associated in the civilian setting with blunt injury and pelvic fracture, penetrating injuries of the membranous urethra may occasionally be encountered in war as well, as noted by both Lewis(*1*) and Salvatierra.(*7*) The inability to pass a catheter into the bladder, associated with an obvious wound deep in the perineum, may be the only evidence sufficiently strong to mandate the emplacement of a suprapubic cystostomy tube for bladder drainage. Continued bleeding may also require extraordinary open hemostatic measures for control. Adjacent injury to the rectum, if present, will mandate colostomy fecal diversion as well. Attempts at acute realignment of the urethral ends, in the face of all the collateral sources of potential morbidity, are probably ill advised. Cystostomy urinary diversion alone should be sufficient primary treatment.

Wounds of the bulbous urethra, or of the penile urethra at the penoscrotal junction, are best served by suprapubic tube bladder drainage. Other than wound debridement,

primary repair of extensively traumatized perineal and periurethral tissue is ill advised. Scarring and stricture of the urethra will inevitably occur despite any creative reconstructive procedures performed upon traumatized and contaminated tissues. At most, further distally, following debridement of penile urethral wounds, "marsupialization" or sewing of the urethral edges to the surrounding skin edges can be undertaken after suprapubic urinary diversion has been accomplished. Relative to satisfactory functional and cosmetic results, primary reconstitution of the urethra after missile wounds will generally be futile. The additional decision to leave an indwelling urethral catheter in hopes of "splinting" urethral healing often leads to urethritis, periurethral abscess, epididymitis, and potentiation of stricture.

Wounds of the Genitalia

Such wounds are very common in a war characterized by the extensive use of mines, booby traps, and fragmentation munitions. Among 594 patients with wounds of the genitalia in one Vietnam study, fully 27.6 percent required blood transfusions, the average quantity being 10.45 units.(*6*)

Treatment of penile injuries (separate from possible urethral injury) is aimed at conservative debridement of only obvious necrotic tissue and approximation of Buck's fascia to minimize penile deformity, if possible. If the latter repair is not feasible, packing and delayed repair is the only available option. Delayed primary closure of the penile skin is an acceptable approach to integumentary covering following initial debridement.

Penetrating wounds of the scrotum are generally explored for purposes of hemostasis and debridement. Rupture of the testis may have occurred, due to either direct penetration or the concussive effect of the missile. Reconstitution of the tunica albuginea of the testis should be undertaken, if at all feasible. Removal of obviously nonviable testes may also be accomplished if one can make such a determination initially. At that time, placement of a urethral catheter as a guide will allow inspection of the bulbous urethra in the roof of the scrotum.

Primary suture of the scrotal wall, with dependent externally directed tissue drains, would appear to be a satisfactory means of closure. If massive loss of the scrotal wall has occurred, one may still find that viable peripheral remnants of scrotum are most "forgiving," and will eventually accommodate to scrotal contents if any degree of primary skin closure can be accomplished. If not, testes can either be placed separately beneath ipsilateral adjacent thigh skin flaps, or sutured together to forestall torsion, and wrapped in moist gauze in anticipation of subsequent skin grafting.

Reprogramming Our Professional Expectations

During the Vietnam War semipermanent hospitals and hospital ships, with equipment and medical staff comparable to civilian trauma centers, were located close to the battle areas. Most of the wounded were rapidly transported by helicopter to these facilities, thereby eliminating the multiple stops and transfers which characterized medical care and evacuation procedures of previous wars. Definitive forward treatment of injuries was commonly undertaken in-country.

The implementation of peacetime prioritization of care, which directs the greatest initial efforts to the most seriously injured, was made possible in Vietnam by the availability of ample supplies of whole blood and relative logistical largesse. This contrasts with surgical policy in previous wars which emphasized, in the forward areas, emergency life-threatening stabilization surgery only. (Large quantities of whole blood, for example, as utilized to support patients with urological injuries in Vietnam, were often not available.)

In future conflicts, significantly new and different demands may be made on the military medical support structure. Predicted tactical changes may well prevent us from using the modern medical support systems identical to those which facilitated our remarkable medical record in Vietnam. Similarly, patients may arrive in medical facilities much later after the wounding event than was commonly seen in Vietnam. Physiological depleted patients with necrotic infected wounds may become abundant once more. Furthermore, after initial medical treatments are rendered, long evacuation chains with protracted delays may again become commonplace.

Regardless of the conditions under which the war is fought, however, the intensity of the wounding process in combat, and the simultaneous generation of multiple combinations of injuries not commonly seen in peacetime, mandate a continuing analysis of the art and science of combat surgery. The requirement for "tradeoffs and compromises," under suboptimal physiologic or environmental circumstances, is inherent to the process of injury management in war. Relative to "defined standards of practice" in peacetime civilian practice, the acknowledgment that unique decisions will have to be made, responding more to the circumstances under which war is fought, will constantly challenge physicians to think creatively and adaptively. Refined concepts of "quality of care" in war, as are defined in this essay for genitourinary surgery, should be extended to all specialty components of combat medical support.

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Let's Get Realistic

As a Battalion Surgeon, I read CAPT Smith's article, "Let's Get Realistic About Medical Preparedness for War" (September-October 1989), with great interest. Unfortunately, I know very well how poorly prepared we are for actual combat casualties. To start with, none of our training simulates the chaos of a mass casualty situation. Next, our corpsmen are not adequately trained to treat casualties in the field by Hospital Corps Schools and Field Medical Service Schools, and require a significant amount of training upon reaching the FMF just to learn the basics. Finally, having done a surgical internship at Naval Hospital, San Diego and a rotation on an urban trauma service as a medical student, I was prepared relatively well for trauma in a major hospital ER. Treating mass casualties in the field overseas is a radically different situation—intellectually and emotionally.

The CH53D that crashed during Team Spirit '89, crashed about 1 km from our BAS. The fuel explosion that accompanied the crash was responsible for the majority of injuries. I was on the scene within minutes, as were about 10 of my corpsmen. We evacuated 16 crash victims to the USS *Belleau Wood* (LHA-3). One died upon arrival, the rest are all still alive. Thirteen required prolonged hospitalization in Brooke Army Medical Center's Burn Unit. All the casualties required urgent medevacs, and we were fortunate enough to have all the casualties evacuated by helicopter within 45 minutes.

While there were many distinct differences between this situation and combat, there were also many similarities. There were no rounds going down range, but we were working in very close proximity to a burning helicopter that had already had one fuel pod explode. Most importantly, we were overseas and on a field exercise; however, we did not have the amount of supplies, vehicles, or personnel doctrine dictates we should have in combat. We did have abundant help from the Marines and almost immediate helicopter medevac, both of which are unlikely in any future conflict, as CAPT Smith points out. Overall, though, I think that some of the lessons we learned would be very applicable to future casualty care.

First, I think the chaos of a situation like that needs to be emphasized. We learn to practice medicine in large hospitals, which despite their occasional chaotic appearance, are very highly structured and finely tuned organizations. Large, or even relatively small, numbers of casualties spread out around a burning helicopter in the middle of a rice paddy, with people running everywhere yelling and screaming, is the antithesis of a hospital. I can easily understand the reaction of some of the inexperienced medical officers during the Korean War. The diverse number of new experiences and sensations is overwhelming. The problem is, that as the medical officer on the scene, you have to take charge and make many rapid decisions. You have to make order out of the chaos; this is not an insignificant task. Every Navy doctor would do well to think about their ability to do this, and try to improve this ability.

Next, it is vital to teach Navy doctors that at a BAS in the field, the corpsmen provide the actual care. In a hospital it is relatively easy to care for trauma victims. You usually have more than one physician for every patient as well as large numbers of supporting personnel. That is not the reality in the field. As I learned, even a small number of wounded will swamp one doctor. Your corpsmen then become physician extenders, providing care to critically injured patients. They do this in the line companies with no medical officer around and at the BAS. Corpsmen need to understand triage and treatment principles, and they have to be able to start caring for patients immediately, without supervision. You have to rely on their ability to assess critical injuries rapidly and bring them to your attention. You have to trust them to clean wounds, start IVs, and maintain airways without your constant supervision.

In a future war, with the probable lack of helicopter medevac from the front lines, we will see a significant increase in BAS utilization, in terms of both numbers of patients seen and time spent there by individual patients. Clearly, these changes will require even more knowledgeable and skilled corpsmen than previous wars have. Unfortunately, too many corpsmen come to the FMF ready to be nurse's aides. They know how to change beds and bedpans, and if they take a few more courses they can become LVNs. Corpsmen in the field need to be physician extenders, not LVNs. We have some corpsmen trained to do this, but they learned their skills in Army and Air Force schools or in (now civilian run) naval hospital emergency rooms. From the operational perspective, it now seems that we are so afraid of malpractice and quality assurance that we are letting our corpsmen do less and less in the hospitals and branch clinics. It is time that senior Navy medical personnel thought about what they are doing to medical readiness and started really training our corpsmen well, and started increasing their patient care responsibilities. While I am very proud of my corpsmen and the way they responded to the situation, I am concerned that future corpsmen will not do as well, unless we train them better.

The key lesson for the GMOs, is that they need to spend a lot of time training their corpsmen. They should establish a bond of trust between themselves and their corpsmen. They need to realize that in a crisis, they cannot take care of every patient, and therefore, they will depend heavily upon their corpsmen.

Finally, military physicians need to be taught all about prehospital care, because that is what many of us will provide. It is certainly what our FMF corpsmen will provide, and if we don't know it, we can't teach them. Our

combat casualty care education should continue after C-4 with realistic lectures and hands-on demonstrations. We should practice effective ways to stop bleeding with the supplies in a unit one. We should be able to start IVs at night in a tactical environment. We need to read articles about the various types of injuries characteristic of different types of weapons systems. We need to discuss the correct management of casualties in a mass casualty situation. It is wrong to dwell upon a complete secondary survey on one patient when 10 others are waiting with critical injuries for a primary assessement. We should discuss realistic triage scenarios, and hopefully all this will help prepare us for actual incidents. A lot of Navy physicians need to learn what their priorities should be. I hope this letter will help them realize that.

LT M.E. Ivy, MC

The Day the Earth Moved

I'm writing regarding Ms. LaMacchia's article, "The Day the Earth Moved," which was in the January-February 1990 issue of *Navy Medicine.*

I, too, would like to commend all those individuals who participated in the rescue efforts on the Interstate 880 Cypress structure collapse. But I would also like to have recognized those from other commands who were involved in the heroic efforts to reinforce how well Navy medical commands help support each other and the public when confronted with disaster. Specifically, the support put forth from other commands' medical photographers. The Naval School of Health Sciences, San Diego, CA, sent half of its medical photography staff to assist with the documentation efforts. HM1 Ronald Wright, HM1 Daniel Vasil, and HM2 Robert Williams quickly volunteered when the call for assistance was received to augment Oakland Naval Hospital's two-man department. In less than 12 hours, these men made the necessary arrangements, packed their photography gear and joined in a once in a lifetime experience that tested their stamina as well as their photographic expertise. Additionally, the lone medical photographer from Naval Hospital, Bremerton, WA, HM2 Steven Gerald, and Mr. Bill Frye from Letterman Army Institute of Research joined the photography team.

These photographers took hundreds of photographs that were instrumental in the documentation and investigation of the disaster. The response and support given by all commands deserve recognition.

CAPT M.D. Iczkowski, MSC

In Memoriam

It has come to our attention that an In Memoriam on CAPT James W. Manhart was omitted in Navy Medicine. *We regret the error.*

CAPT **James W. Manhart,** MC, USNR, died 19 June 1989 in a tragic swimming accident while on annual active duty for training at Camp Lejeune, NC. He was 49.

Dr. Manhart, who was assigned to NR MED IMA 5101 at Naval Reserve Readiness Command, Great Lakes, IL, grew up in central Illinois. He was a Berry Plan medical officer and graduated from Stanford University in 1967. He was board certified in internal medicine, hematology, and oncology. During his medical school training, he traveled to Central America and completed a fellowship in tropical medicine. Following graduation he completed an internship at Kings County Hospital, New York followed by residency in internal medicine at the University of Wisconsin at Madison. In 1974, he completed a fellowship in hematology and oncology at the Philadelphia Naval Hospital.

Dr. Manhart's civilian practice was located in Libertyville, IL. He served as chairman, department of medicine, Lake Forest Hospital from 1983 to 1985. He also served as medical director, Star Hospice, St. Therese Hospital, Waukegan, IL, from 1980 to 1986. In addition, he chaired the Lake County chapter of the American Cancer Society in 1987.

Dr. Manhart was a dedicated and devoted Naval Reserve medical officer. His memory will long be cherished by all who experienced the honor of serving with him.

"Performance Counseling" Correction

Navy Medicine featured an article entitled "Performance Counseling" in the January-February 1990 issue. The author, Scott A. Haraty, should have been listed as HMC vice HM1. HMC Haraty is now an instructor at the Naval School of Health Sciences, Bethesda, MD.

Navy Medicine 1920

Nose and Throat Clinic, USS *Relief*

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